

INTERNATIONAL STANDARD

ISO
8597

First edition
1994-09-15

Optics and optical instruments — Visual acuity testing — Method of correlating optotypes

*Optique et instruments d'optique — Méthode d'essai de l'acuité
visuelle — Méthode de corrélation entre les optotypes*



Reference number
ISO 8597:1994(E)
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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8597 was prepared by Technical Committee ISO/TC 172, *Optics and optical instruments*, Subcommittee SC 7, *Ophthalmic, endoscopic, metrological instruments and test methods*.

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Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Optics and optical instruments — Visual acuity testing — Method of correlating optotypes

1 Scope

This International Standard specifies a method of correlation between a given set of optotypes and the standard optotype (Landolt ring) specified by ISO 8596.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 8596:1994, *Ophthalmic optics — Visual acuity testing — Standard optotype and its presentation*.

3 General requirements for optotypes

For all optotypes, the requirements and method of use given in ISO 8596 shall apply, unless otherwise specified in this International Standard.

Each size of a set of optotypes shall be specified in terms of the size of some critical dimension common to that set of optotypes. In the case of the standard Landolt ring, the critical detail is the gap size. In the case of a set of optotypes where there is no dimension common to the different members of the set (e.g. optotypes for illiterates), the members of a given acuity grade shall have the same relative dimensions as corresponding members of other acuity grades. The size shall be identified by a specified dimension of one member of the set.

NOTE 1 If letters or figures are used for visual acuity measurement, then it should be acknowledged that these normally show large differences in respect of recognizability, even if their size and thickness of stroke are identical. The disadvantages of their use can be reduced by choosing letters or figures which are comparable with each other.

4 Correlation of optotypes

4.1 Standard optotypes

The optotype sizes (grades) specified in ISO 8596 shall be used. Sufficient grades or steps shall be used to establish a frequency of seeing curve for the standard optotype and the optotype being investigated.

4.2 Test area

The test area shall be circular with a diameter of $4^\circ \pm 0,4^\circ$.

The surrounding field shall have a diameter of $15^\circ \pm 1,5\%$ and shall be illuminated homogeneously so that it does not influence the measurement.

The luminance of the surrounding field shall not be greater than that of the test area.

4.3 Presentation of the optotypes

In making a measurement of visual acuity with the eight-position Landolt ring, 120 presentations shall be made one ring at a time with the ring positions for successive presentations arranged in random order. In the case of the optotypes to be correlated, these shall also be presented one at a time in random order until a series of 120 presentations has been completed. In the 120 presentations, the different optotypes in each set shall be represented approximately the same number of times.